

QGIS user day 2024

Pic2map plugin

Mono-photogrammetry in QGIS

EPFL

HE^{VD}
IG



Forêts, Faune
et Parcs

Québec

 **group**
ingénieurs & géomètres



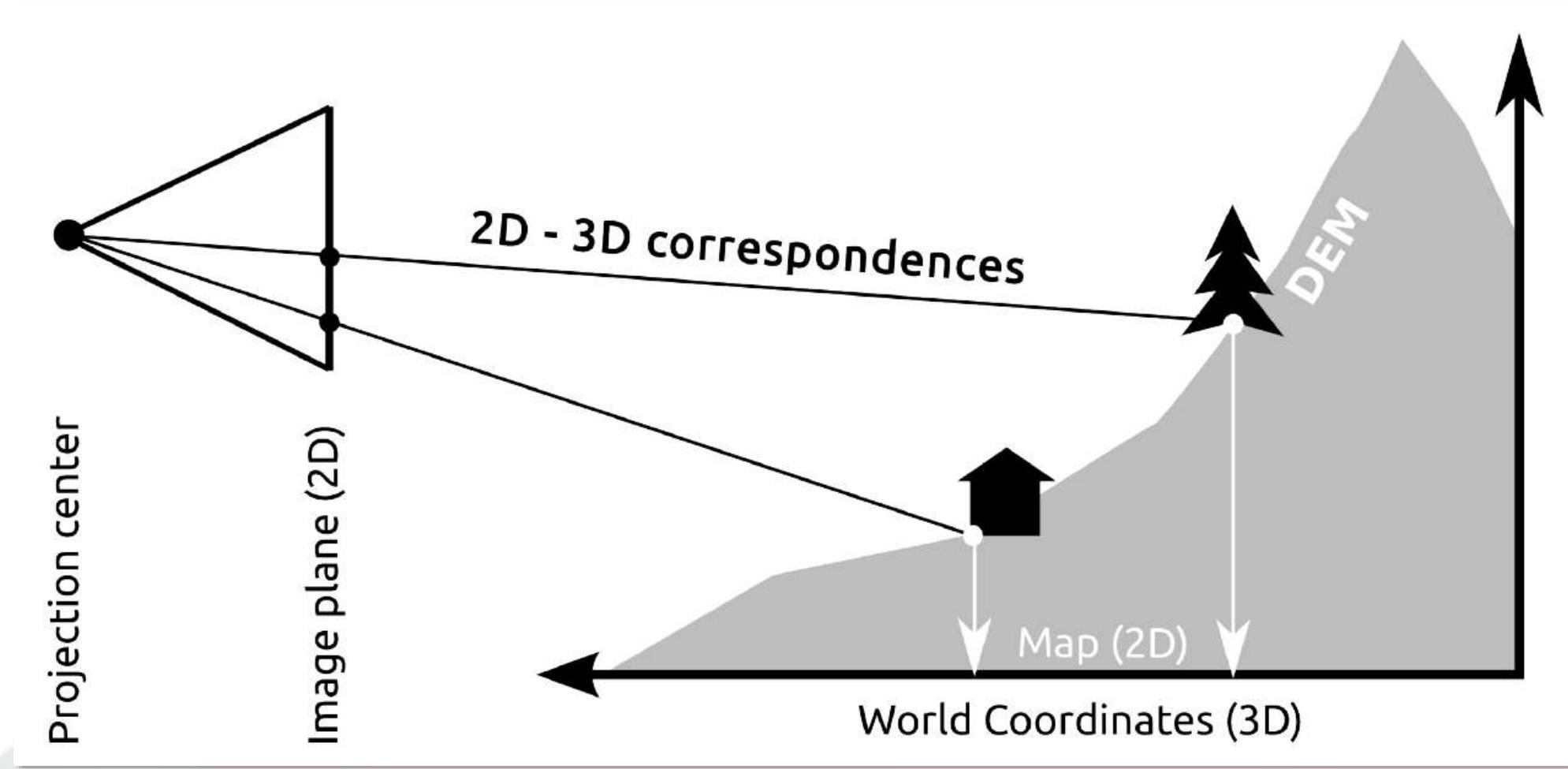


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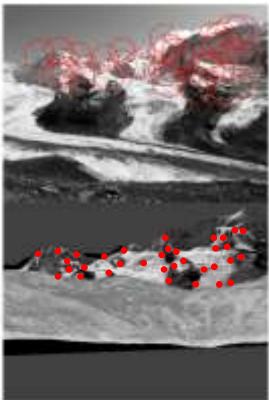


Principle



Pic2Map and linked projects

T. Produit
G. Milani
Prof. F. Golay
Prof. D. Tuia

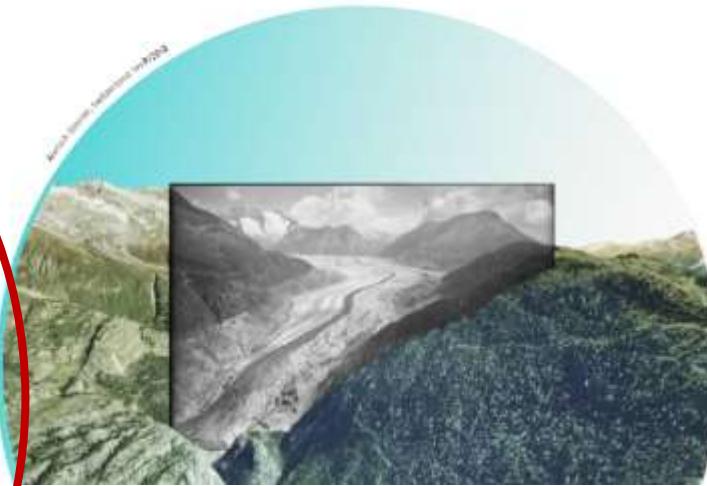


C. Bozzini
WSL Monoplotting tool



The participative time machine

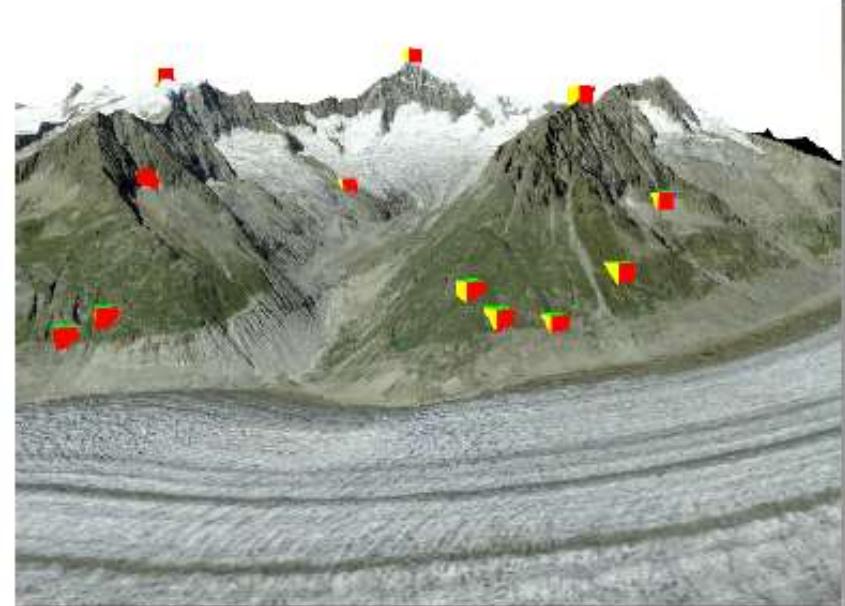
In the past there were no GPS. Help us to generate HIGH RESOLUTION Images of the world.



T. Produit,
Prof. J. Ingensand
Prof. D. Rappo
And many, many others
snapshot.heig-vd.ch



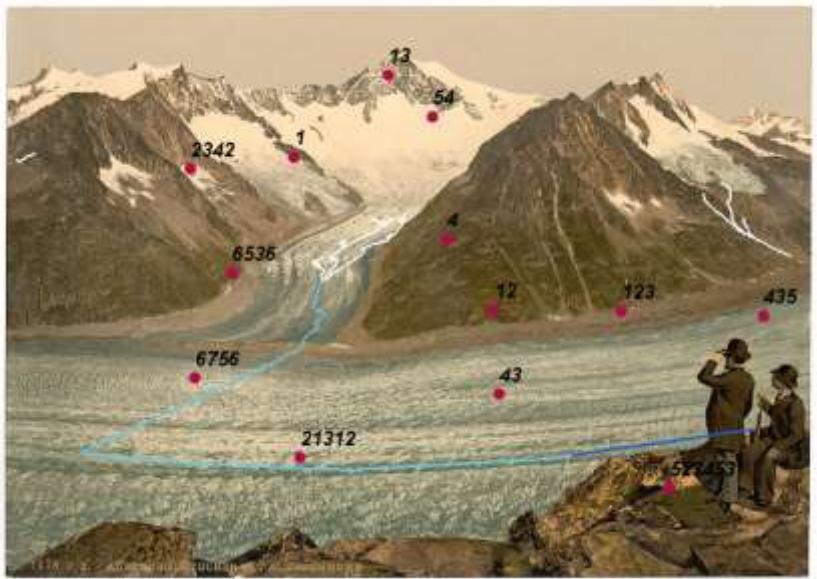
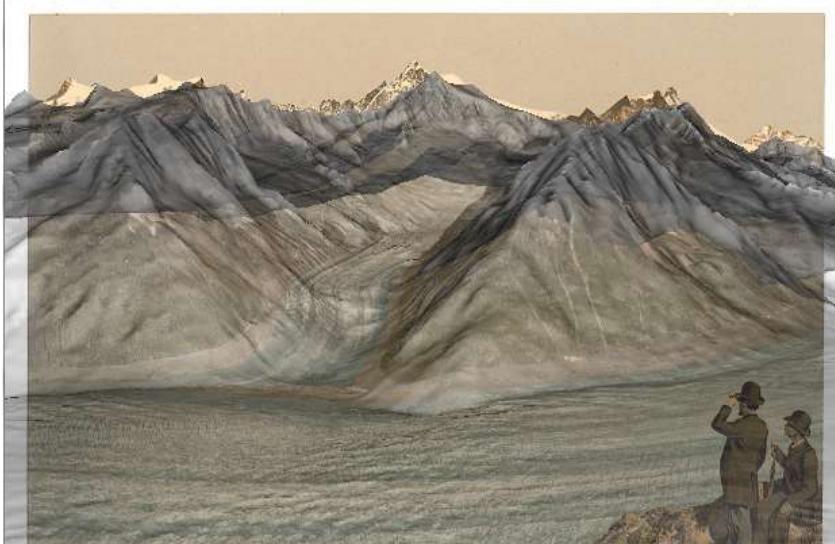
Georeferencing / pose estimation



Picture_i	Picture_j	Local_x	Local_y	Local_z	Use as GCP	3D error
1 212.114	419.65	647226	142937	2387	Enable	85.1917
2 462.378	444.066	647909	143483	2252	Enable	137.917
3 114.813	155.507	645996	142745	3224	Enable	1640.61
4 94.133	85.7467	642580	146298	4096	Enable	236.842
5 694.693	149.693	647144	144904	3306	Enable	53.3824
6 151.406	268.576	642208	144713	2770	Enable	82.3653

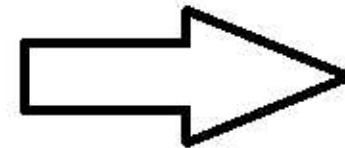
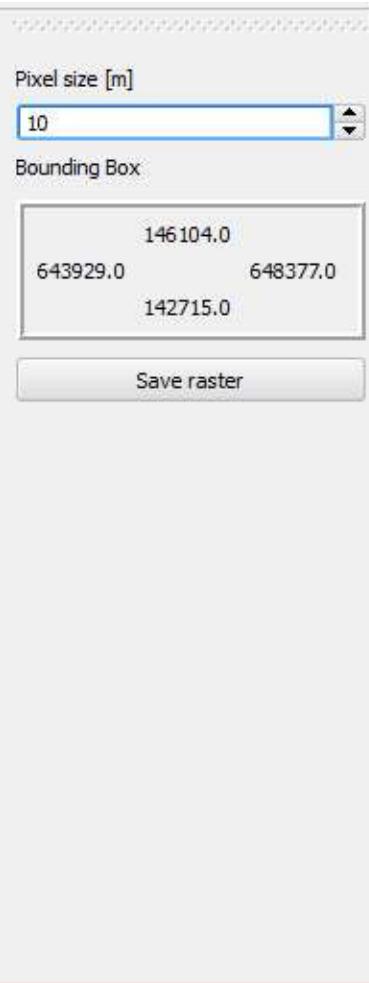
Ready

Monoplotting



- 2D and 3D canvas are directly related via the terrain model
 - The cursor move simultaneously in the image and map canvas
 - Simultaneous digitalisation in the picture and map
 - Vector data from the map are projected into the picture

And more...



<https://www.youtube.com/watch?v=3Wic6PYUaKU>

Use cases

Environnement – landscape evolution

- *Jean-François Bourdon,*
Ministère des Forêts, de
la Faune et des Parcs du
Québec
- Georefencing aerial
images of the forest
beyond 51 degree
- Improve database with
footprint and orientation





Use cases

Environnement - natural hazards

- S. Gindraux, geoformer igp AG,
Estimation du volume de glace en
haute montagne
- Georeferencing and measurements in
glacier photographies

Use cases

Cultural heritage

- T. Produit,
Rephotography –
Patrimoine de Leytron
- Georeferencing
historical image to
shoot the same picture



Pic2map now

- Almost abandonware
- Still interest: issues are raised but...
 - no one is willing to pay
- Required:
 - Update to current QGIS
 - Solve main issues
 - 10k CHF
- Opportunities:
 - Use QGIS 3D map view
 - Improve georeferencing / pose estimation using snapshot pose estimation script
 - Use snapshot API to import historical images

The image shows two screenshots related to the Pic2map project. The top screenshot is a GitHub Issues page filtered by 'is:issue is:open'. It lists several open issues, including:

- Error when I activate the plugin (#26)
- Digitizing Tool Renamed? (#27)
- Images bigger than 300'000'000 pixels (old satellite films) not working (#25)
- orthorectification produces noisy image (#24)
- add install instructions for Mac to readme.md (#23)
- Couldn't load plugin 'Pic2Map' - Qgis 3.14.16 (#22)
- ortho.py:420,421 imXLine and imYLine (#17)

Each issue has a small icon, a title, a number, and a timestamp. The bottom screenshot shows a QGIS 3D map view of a mountainous area. On the left, there is a detailed metadata panel for a selected image. The panel includes fields for Operat, Station, Date, Source ID, License, and Source. The main view shows a 3D terrain model with a large glacier and surrounding peaks. A specific image from the dataset is highlighted with a red border.

Merci!

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